

REMARKS

The Office rejected claims 1-6. With this paper, none of the claims are amended, none are canceled, and none are added.

Claim Rejections under 35 USC §103

In the Office Action, claims 1-4 and 5-6 are rejected under 35 USC §103(a) as being unpatentable over Cramer *et al.* (US Publication 2002/0150678, Cramer hereinafter) in view of Hugelshofer *et al.* (US Patent 4,436,523, Hugelshofer hereinafter).

The present invention relates to a discharging ink for ink jet printing on cloth (claims 1-4) and a process for preparing a discharged polyester fiber cloth (claims 5-6). As recited in claim 1, the discharging ink comprises (1) a nonionic surfactant having HLB value of 9 to 16 and ethylene oxide-added mol number of at most 30, (2) a guanidine weak acid salt (i.e. a salt of guanidine with a weak acid such as carbonic acid) and (3) water.

The "discharging ink" is applied on an already colored (dyed) polyester fiber cloth for preparing a so-called "discharged polyester fiber cloth" (page 1, lines 7-18). The nonionic surfactant having a HLB value in the claimed range has the effect of drawing out the dye from the cloth. The guanidine weak acid salt softens the cloth so that the nonionic surfactant effectively draws out the dye from the cloth. With a combination of the nonionic surfactant and the guanidine weak acid salt in the discharging ink, and the HLB value of the nonionic surfactant in the claimed range (see Examples 1 and 2), the discharging properties (measured by reflection densities before and after discharging) of the cloth samples are significantly better than that with only the nonionic surfactant (Comparative Example 3) or only the guanidine weak acid salt (Comparative Example 4).

The alkalinity of the discharging ink is critical to the process of preparing the cloth. A stronger alkaline material than the guanidine weak acid salt (such as sodium hydroxide) damages the cloth. On the other hand, a weaker alkaline material (such as sodium hydrogen carbonate and sodium carbonate) has a decreased effect on the softening the cloth.

The primary reference, Cramer, relates to a coating composition for applying on surfaces of various soft materials and fabrics for improving properties of the surfaces. The coating composition of Cramer comprises nanoparticles and a nonionic surfactant having HLB value of 5 to 20 (paragraph [0119]). Coating techniques include spraying and ink jet printing (paragraphs [0151], [0155], cited by the Examiner). The resulting coating layer prevents stains from setting into the surfaces (paragraph [0174], Figs. 1-3).

However, as the Examiner has already acknowledged, Cramer does not teach or suggest that the coating composition comprises a guanidine weak acid salt.

Besides, Cramer does not teach or suggest that the coating composition can be used as a discharging ink for ink jet printing on cloth. As mentioned above and with further reference to page 3, lines 22-26 of the instant specification, the term "discharging" means drawing out the dye from the cloth previously colored with dye. Nowhere in Cramer is such a feature disclosed.

The secondary reference, Hugelshofer, discloses storage stable colorant compositions comprising a non-ionic copolymer of ethylene oxide and a water-soluble aminoplast precondensate (col. 3, lines 49-56). Suitable water-soluble aminoplast precondensate are condensation products which may be obtained by reaction of a carbonyl compound with a compound containing amino, imino or amide groups (col. 3, lines 57-60). Guanidine is described as one of suitable compounds containing amino, imino or amide groups that reacts with carbonyl compound to produce that aminoplast precondensate (col. 4, lines 3-4).

However, Hugelshofer does not disclose anything about guanidine weak acid salt, which is a different compound than guanidine. Unlike the guanidine weak acid salt, guanidine is decomposed to ammonia and urea after dissolving in water. For this reason, not guanidine but the guanidine weak acid salt is essential in the present invention. As described in page 8, lines 6-9 of the instant application, suitable guanidine weak acid salts for the instant invention include carbonates such as guanidine carbonate and guanidine bicarbonate, carboxylate such as guanidine acetate and also, guanidine phosphate and salts of phenol derivative compounds. None of these compounds were mentioned by Hugelshofer.

Further, although Hugelshofer discloses that the storage stable colorant composition may be used as a printing paste for coloring and printing textile materials (Abstract), it does not disclose or suggest that the composition can be used as a discharging ink for drawing out dye from the cloth.

Therefore, the combination of Cramer and Hugelshofer fails to lead to the presently claimed invention wherein the composition comprising a nonionic surfactant having HLB value of 9 to 16 and ethylene oxide-added mol number of at most 30, a guanidine weak acid salt and water is used as a discharging ink for drawing out dye from the cloth.

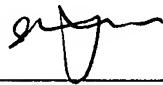
Based on the foregoing, the discharge ink composition of claim 1 is patentable. Applicant respectfully requests the rejection of claim 1, and dependent claims 2-4, be reconsidered and withdrawn.

Claim 5 recites a process for preparing discharged polyester fiber cloth. The process comprises a step of injecting a discharging ink on a colored cloth comprising polyester fiber by an ink jet, a step of wet heat treatment or dry heat treatment at 150 to 190°C, and a step of soaping treatment. The discharge ink has the patentable composition as in claim 1. Therefore, claim 5 is also patentable. Applicant respectfully requests the rejection of claim 5, and dependent claim 6, be reconsidered and withdrawn.

Conclusion

For all the foregoing reasons, it is believed that all the claims of the instant application are patentable, and their passage to issue is earnestly solicited. Applicant's agent urges the Examiner to call to discuss the present response if anything in the present response is unclear or unpersuasive.

Respectfully submitted,



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